Mediumband

A new framework for harmonising wireless receivers and the propagation environment

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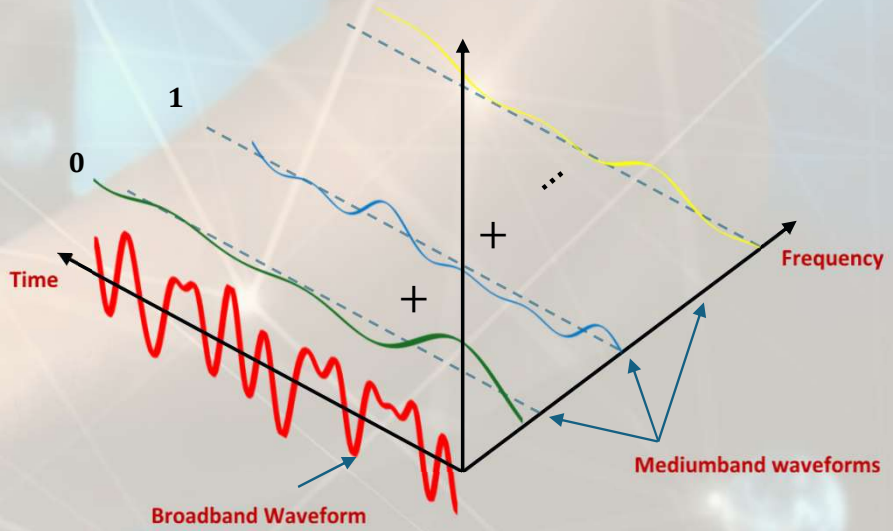
Abstract: Wireless communication is a tripartite business between the transmitter (TX), the receiver (RX), and the propagation environment, where the harmonization of all three parties is essential. In modern wireless communication, many efforts have been made to achieve this harmonization, but operating in the mediumband—or, in other words, mediumband wireless communication—provides a new framework for achieving it more intimately, especially between the wireless receiver and the propagation environment. In this talk, we explain what mediumband is, outline its main characteristics, discuss why it matters, and show how it can be leveraged in future wireless communication systems.



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Online participants

Link : https://kth-se.zoom.us/j/61948234927
Date : Tuesday April 14, 2026
Time : Stockholm, Sweden 15.00 – 16.00
Paris, France 15.00 – 16.00
London, UK 14.00 – 15.00
Dublin, Ireland 14.00 – 15.00
New York, USA 09.00 – 10.00
Melbourne, Australia 23.00 – 24.00
Tokyo, Japan 22.00 – 23.00
Shanghai, China 21.00 – 22.00
Moscow, Russia 16.00 – 17.00
Delhi, India 18.30 – 19.30
Dubai, UAE 17.00 – 18.00

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RELEVANT PEER-REVIEWED REFERENCES

[1] **Simulating mediumband wireless communication systems: A concise description**—D. A. Basnayaka, and et. al. in: ArXiv Computer Science (CS.IT) Archive—tutorial paper with MATLAB codes, Oct. 2025.

[2] **Integrating mediumband with emerging technologies: Unified vision for 6G and beyond physical layer**—D. A. Basnayaka and A. Firag available in Cs.IT Archive at www.ArXiv.org, Feb. 2025.

[3] **A link-level performance analysis for mediumband wireless communication**—A. Firag, J. Jia and D. A. Basnayaka in IEEE Virtual conference on Communications (IEEE VCC), Dec. 2024.

[4] **Communicating in the mediumband: What it is and why it matters**—D. A. Basnayaka in: IEEE Communications Magazine, vol. 62, no. 11, Nov. 2024.

[5] **Bit error rate performance and diversity analysis for mediumband wireless communication**—D. A. Basnayaka and J. Jia in: Proceedings of IEEE Virtual conference on Communications (VCC), Nov. 2023.

[6] **The effect of deep fading avoidance in mediumband radio frequency channels**—D. A. Basnayaka and P.J. Smith in: Proceedings of IEEE Vehicular Technology Conference, Hong Kong, Oct. 2023.

[7] **A channel engineering method for future wireless communication**—T. Sun, J. Jia, D. A. Basnayaka in Proceedings of IEEE Vehicular Technology Conference (VTC-Spring), Florence, Italy, Jun. 2023.

[8] **Introduction to mediumband wireless communication**—D. A. Basnayaka in: IEEE Open Journal of Communication Society (IEEE OJCOMS). May 2023.

[9] **Mediumband wireless communication**—D. A. Basnayaka in Proceedings of IEEE Vehicular Technology Conference (IEEE VTC-Fall), London-Beijing, UK, Sep. 2022.

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